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EXAMINER

HENN, TIMOTHY J

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/008,077

Applicant(s)

AAGAARD ET AL.

Examiner

Timothy J. Henn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
- 4a) Of the above claim(s) 59-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-28, 31-56 and 69-78 is/are rejected.
- 7) ☒ Claim(s) 6, 29, 30, 57 and 58 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I (Claims 1-58 and 69-78) in the reply filed on 14 July 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claim 60-68 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4, 7, 8, 31, 44, 45, 48, 77 and 78 are rejected under 35 U.S.C. 102(b) as being anticipated by Paff (US 5,164,827).

#### **[claim 1]**

Regarding claim 1, Paff discloses a multiple camera video system comprising: a plurality of cameras (Figure 6, MASTER CAMERA 100 and SLAVE CAMERAS SD1-SD5); a master pan head for positioning a selected master camera from the plurality of

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cameras (Figure 6, Items 13-16); and a master broadcaster computer for calculating telemetry for at least one slave camera from the plurality of cameras (c. 4, ll. 6-49).

**[claim 2]**

Regarding claim 2, Paff discloses a master pan head which is remote from the plurality of cameras (Figure 6).

**[claim 4]**

Regarding claim 4, Paff discloses a master pan head including a zoom adjustment (Figure 6, Item 16).

**[claim 7]**

Regarding claim 7, Paff discloses a plurality of robotic pan heads upon which each of the plurality of cameras is mounted for remotely controlling said plurality of cameras (Figure 6; c. 3, ll. 58-62).

**[claim 8]**

Regarding claim 8, Paff discloses robotic pan heads including a pan and tilt function (Figure 6, Items 13 and 14).

**[claim 31]**

Regarding claim 31, Paff discloses a communications medium coupling the plurality of cameras to the master broadcaster computer (Figure 6).

**[claim 44]**

Regarding claim 44, Paff discloses a multiple camera video method, comprising the steps of: using a master pan head to position a master camera (Figure 6, Items 13-16, MASTER CAMERA 100); calculating telemetry settings for a plurality of slave

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cameras (Figure 6, SLAVE CAMERAS SD1 - SD6) based on the master camera telemetry and a geometric transform in a computer remote from the plurality of slave cameras (c. 4, ll. 6-49); and communicating telemetry settings to the plurality of slave cameras (c. 4, ll. 6-49).

**[claims 45 and 48]**

Regarding claims 45 and 48, see claims 2 and 7 respectively.

**[claims 77 and 78]**

Regarding claims 77 and 78, see claims 1 and 2 respectively.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 5, 9, 37, 46 and 47 rejected under 35 U.S.C. 103(a) as being unpatentable over Paff (US 5,164,827).

**[claim 3]**

Regarding claim 3, Paff lacks a master pan head including a monitor mounted thereon. Official Notice is taken that it is notoriously well known in the art to include electronic viewfinders or monitors on cameras to allow a local camera operator to verify the image which is being captured by the camera. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a

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monitor mounted on the master pan head to allow the option of operating the camera locally while being able to verify the image which is being captured by the camera.

**[claim 5]**

Regarding claim 5, Paff lacks a master pan head including a height intersect adjustment. Official Notice is taken that it is notoriously well known in the art to allow the height of cameras to be adjusted to allow greater control over the field of view of the camera. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a height intersect adjustment in the master pan head to allow greater control over the field of view of the camera.

**[claim 9]**

Regarding claim 9, Paff does not specifically disclose pan and tilt axes of the robotic pan heads which intersect at a point within the body of the plurality of cameras. Official Notice is taken that it is notoriously well known in the art to include pan and tilt axes of pan/tilt heads which intersect at a point within the body of the camera to allow independent control of pan and tilt functions of the cameras. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include pan and tilt axes which intersect at a point within the body of the slave cameras to allow independent control of the plurality of cameras.

**[claim 37]**

Regarding claim 37, Paff does not disclose a cam-A computer. Official Notice is taken that it is notoriously well known to include computers in video systems for easy video editing. Therefore, it would have been obvious to one of ordinary skill in the art at

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the time the invention was made to include a computer in the system of Paff to allow easy editing of the resulting video. The examiner notes that a "cam-A computer" is not well known in the art nor is it described in the application to any degree which would define the term to require a specific structure. Therefore, any normal computer can be considered a "cam-A" computer for the purposes of art rejection.

**[claim 46]**

Regarding claim 46, Paff lacks and master pan head and master camera which communicate via an Ethernet connection. Official Notice is taken that it is notoriously well known in the art to communicate with pan heads and cameras using Ethernet connections to allow for communication with the camera over a high-speed internet connection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an Ethernet connection to communicate with the master pan head and master camera via a high-speed internet connection.

**[claim 47]**

Regarding claim 47, see claim 3.

7. Claims 10-16, 32-36 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paff (US 5,164,827) in view of Heidmann et al. (US 6,057,833).

**[claim 10]**

Regarding claim 10, Paff discloses a system connected to the master broadcaster computer which allows for control over camera functions (Figure 6, Item 11), but does not disclose a station which is a paint station. Heidmann discloses that

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the value of television broadcasts can be increased by incorporating graphics illustrations using digital painting applications. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a digital painting application in the station of Paff to make the station of Paff a "paint station" which can increase the value of the broadcasts created by the master and slave cameras.

**[claim 11]**

Regarding claim 11, Paff in view of Heidmann discloses a paint station including a monitor (Figure 16, Item 11A); an input device (Figure 16, Item 11B) and a paint station computer running paint station software (Heidmann).

**[claim 12]**

Regarding claim 12, Paff in view of Heidmann discloses a paint station which is capable of adjusting an attribute of at least one of the plurality of cameras (e.g. pan, tilt, zoom, generated video).

**[claim 13]**

Regarding claim 13, Paff discloses a paint station which can control zoom and focus (Figure 16). Heidmann discloses a paint station which can adjust attributes including red, green and blue (e.g. color) paint (Figure 2, Item 258). However, Paff in view of Heidmann does not disclose a paint station which controls shutter and iris values. Official Notice is taken that it is notoriously well known in the art to allow control of shutter and iris values to properly control the exposure value of the camera. Therefore, it would have been obvious to one of ordinary skill in the art at the time the



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invention was made to include shutter and iris control in the paint station of Paff in view of Heidmann to properly control the exposure value of the master and slave cameras.

**[claim 14]**

Regarding claim 14, Paff discloses a station which can adjust the attribute on more than one of the cameras simultaneously (c. 7, l. 67 - c. 8, l. 15).

**[claim 15]**

Regarding claim 15, Paff discloses that the camera attribute can be adjusted while the camera telemetry is being automatically controlled by the master broadcaster computer (c. 7, l. 67 - c. 8, l. 15).

**[claim 16]**

Regarding claim 16, Paff discloses a paint station which is at least one-fifth of the number of cameras (Figure 6; claim 1).

**[claims 32 and 33]**

Regarding claims 32 and 33, Paff does not disclose a communication medium which is a multi-mode fiber optic cable. Official Notice is taken that the use of multi-mode fiber optic cable is notoriously well known in the art to provide large bandwidth. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use multi-mode fiber optic cable as the communication medium of Paff to obtain a system with a large amount of bandwidth.

**[claims 34 and 35]**

Regarding claims <sup>34</sup>~~35~~ and 35, Paff does not disclose a communications medium which is a triaxial cable wherein a semiconductor in the triaxial cable is used to

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modulate camera telemetry information and the captured image. Official Notice is taken that the use of triaxial cables is notoriously well known in the art to provide low loss and good shielding properties. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a triaxial cable and a semiconductor medium within the triaxial cable to modulate the camera telemetry information and the captured image data to provide a communications medium with low loss and good shielding.

**[claim 36]**

Regarding claim 36, Paff does not disclose a communications medium which is a wireless RF connection. Official Notice is taken that the use of wireless RF connections is notoriously well known in the art to not require large amounts of cables to be run. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a wireless RF connection to avoid running large amounts of cables.

**[claim 69]**

Regarding claim 69, see claims 1 and 10.

8. Claims 17-28, 49-51, 54-56, 70-72, 74 and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paff (US 5,164,827) in view of Kanade et al. (US 2002/0118286).

**[claim 17]**

Regarding claim 17, Paff does not disclose a calibration station. Kanade discloses a similar system and further discloses that the cameras must be calibrated for focal length, zoom and geometric position prior to operation (Paragraphs 0032 - 0037). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a calibration station in the system of Paff as taught by Kanade to properly calibrate the system so that the relationship of the cameras to the scene and to each other are known.

**[claims 18-20]**

Regarding claims 18-20, see claim 17.

**[claim 21]**

Regarding claim 21, see Figure 6 and claim 1 of Paff.

**[claim 22]**

Regarding claim 22, Paff lacks at least one video storage device. Kanade discloses a similar system and further discloses video storage devices coupled to each camera (Figure 2, Items 30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include video storage devices to allow storage of the video resulting from the cameras of Paff.

**[claim 23]**

Regarding claim 23, Paff in view of Kanade lacks a video storage device which has a plurality of digital disc recorders. Official Notice is taken that it is notoriously well known in the art to record video from cameras onto digital video discs to allow easy transportation of the recorded video. Therefore, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to make the plurality of video storage devices of Paff in view of Kanade digital video disc recorders to allow easy transportation of the recorded video.

**[claim 24]**

Regarding claim 24, Paff in view of Kanade lacks a video storage device which is a file server. Official Notice is taken that it is notoriously well known in the art to store video on file servers to allow remote access to the video. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the video storage devices of Paff in view of Kanade file servers to allow easy remote access to the recorded video.

**[claim 25]**

Regarding claim 25, Paff lacks a digital router connecting the output of each of the plurality of digital recorders and a first slow motion controller. Kanade discloses including a video playback controller to the plurality of video storage devices through a router (Figure 2; Paragraph 0030). However, Paff in view of Kanade lacks a playback controller which is a slow motion controller. Official Notice is taken that it is notoriously well known to include slow motion controllers to allow the option of viewing the video in slow motion. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a slow motion controller in the system of Paff in view of Kanade to view the recorded video in slow motion.

**[claim 26]**

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Regarding claim 26, Kanade discloses a controller which is capable of selecting a router output from the plurality of recorders (Paragraph 0030).

**[claim 27]**

Regarding claim 27, Kanade discloses a controller which is capable of controlling each of the plurality of recorders simultaneously (Paragraph 0030).

**[claim 28]**

Regarding claim 28, Paff in view of Kanade does not specifically disclose a controller which is capable of controlling the forward and backward motion of the output of each of the digital disc recorders. Official Notice is taken that it is notoriously well known in the art to allow both forward and backward motion to be played (e.g. play and rewind) to allow the user to view the video from a certain time period. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the controller capable of both forward and backward motion playback.

**[claims 49-51]**

Regarding claims 49-51, see claims 22-24 respectively.

**[claim 54]**

Regarding claim 54, Kanade discloses producing a relay video feed based on the stored video feeds from the master camera and the plurality of slave cameras (Paragraph 0030).

**[claim 55]**

Regarding claim 55, see claims 26 and 28.

**[claim 56]**

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Regarding claim 56, Kanade discloses the ability to select between sources to use or “selecting a second feed captured by the master camera and the plurality of slave cameras as a second output source after said current output source” as claimed (Paragraph 0030).

**[claim 70]**

Regarding claim 70, see claims 1 and 17.

**[claim 71]**

Regarding claim 71, Paff discloses a master pan head which is remote from the plurality of cameras (Figure 6).

**[claim 72]**

Regarding claim 72, Paff in view of Kanade lacks a plurality of calibration stations. Official Notice is taken that it is notoriously well known that adding multiple calibration stations allows for more cameras to be calibrated faster. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a plurality of calibration stations to calibrate the cameras of Paff in view of Kanade faster.

**[claim 74]**

Regarding claim 74, see claims 1 and 23.

**[claim 75]**

Regarding claim 75, see claims 1, 17 and 23.

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9. Claims 38-43, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paff (US 5,164,827) in view of Anderson (US 5,714,997).

**[claim 38]**

Regarding claim 38, Paff lacks a plurality of microphones and a microphone computer for combining the outputs of the plurality of microphones. Anderson discloses a system which generates sound from a plurality of microphones into a single audio stream to allow a user to experience the audio from a certain viewpoint at a live event (Figure 17A; c. 2, ll. 35-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a plurality of microphones and a microphone computer as claimed in order to allow a user to experience the audio from a certain viewpoint in the scene which the camera system of Paff is viewing.

**[claim 39]**

Regarding claim 39, Anderson discloses the use of directional microphones (c. 21, ll. 48-57).

**[claim 40]**

Regarding claim 40, Anderson discloses microphones which are spaced around a target object which is being recorded (c. 21, ll. 48-57).

**[claim 41]**

Regarding claim 41, Anderson discloses a computer which overlays the output from each of the microphones in the same moment of time (c. 26, ll. 23-39). The examiner notes that the computer of Anderson is capable of doing such an operation "based on the speed of sound and the distance from each of the microphones to a

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target object" as claimed.

**[claim 42]**

Regarding claim 42, Anderson discloses a computer which is capable of using the a calculated speed of sound including an adjustment for the altitude of the microphones and the relative humidity at the site as claimed.

**[claim 43]**

Regarding claim 43, Anderson discloses a output of each of the microphones being connected to a digital mixer which is controlled by the microphone computer (Figure 17A).

**[claim 52]**

Regarding claim 52, see claims 41 and 42.

**[claim 53]**

Regarding claim 53, see claims 41 and 42.

10. Claims 73 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paff (US 5,164,827) in view of Kanade et al. (US 2002/0118286) in further view of Heidmann et al. (US 6,057,833).

**[claim 73]**

Regarding claim 73, Paff discloses a system connected to the master broadcaster computer which allows for control over camera functions (Figure 6, Item 11). However, Paff in view of Kanade lacks at least one paint station. Heidmann discloses that the value of television broadcasts can be increased by incorporating



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graphics illustrations using digital painting applications. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a digital painting application in the station of Paff to make the station of Paff a "paint station" which can increase the value of the broadcasts created by the master and slave cameras.

**[claim 76]**

76  
Regarding claim ~~76~~, Paff discloses a system connected to the master broadcaster computer which allows for control over camera functions. (Figure 6, Item 11). However, Paff in view of Kanade lacks at least one paint station. Heidmann discloses that the value of television broadcasts can be increased by incorporating graphics illustrations using digital painting applications. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a digital painting application in the station of Paff to make the station of Paff a "paint station" which can increase the value of the broadcasts created by the master and slave cameras.

***Allowable Subject Matter***

11. Claims 6, 29, 30, 57 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**[claim 6]**

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Regarding claim 6, the prior art does not teach or fairly suggest a multiple camera video system wherein a master pan head includes a height intersect adjustment which is selected using the wheel on a computer mouse.

**[claims 29, 30, 57 and 58]**

Regarding claims 29, 30, 57 and 58, the prior art does not teach or fairly suggest a multiple camera video system including a digital router and a first slow motion controller wherein an additional digital disc recorder is connected to the output of the digital router.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Henn whose telephone number is (571) 272-7310. The examiner can normally be reached on M-F 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R. Garber can be reached on (571) 272-7308. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJH  
9/29/2005



NGOC-YEN VU  
PRIMARY EXAMINER